Volunteer Lake Assessment Program Individual Lake Reports

LEES POND, MOULTONBORO, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	17,664	**Max. Depth (m):**	11.3	**Flushing Rate (yr^{1})**	12.9
Surface Area (Ac.):	179	**Mean Depth (m):**	3.7	**P Retention Coef:**	0.37
Shore Length (m):	4,000	**Volume (m^{3}):**	2,675,000	**Elevation (ft):**	508

TROPHIC CLASSIFICATION

Year	Trophic class
1992	MESOTROPHIC
2009	EUTROPHIC

KNOWN EXOTIC SPECIES

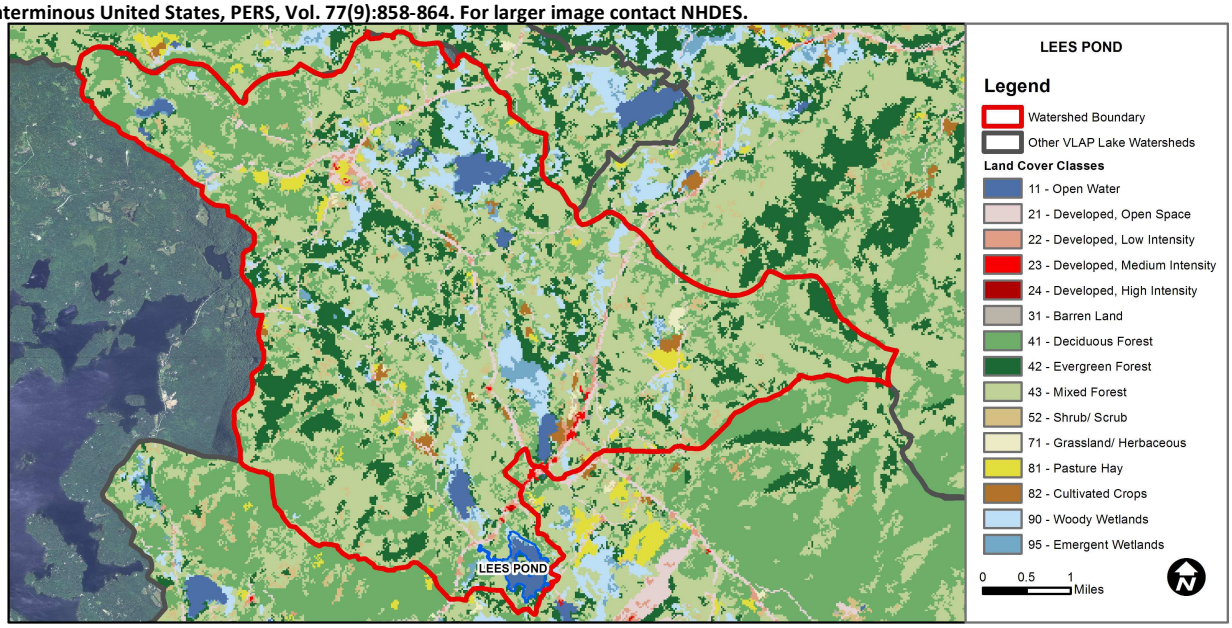
Variable Milfoil

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	2.39	Barren Land	0.08	Grassland/Herbaceous	0.38
Developed-Open Space	2.69	Deciduous Forest	22.71	Pasture Hay	1.25
Developed-Low Intensity	0.63	Evergreen Forest	13.64	Cultivated Crops	0.75
Developed-Medium Intensity	0.15	Mixed Forest	45.77	Woody Wetlands	6.36
Developed-High Intensity	0.01	Shrub-Scrub	1.77	Emergent Wetlands	1.34

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
LEES POND, MOULTONBOROUGH, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels very low in June and increased in July and August, however average levels were below the NH lake median. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels were slightly greater than the NH lake median, but were relatively low.
- **E. COLI:** E. coli levels at the beach areas were well below state standard for public beaches.
- **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) phosphorus levels were relatively low and historical trend analysis indicates levels generally fluctuate from year to year. Hypolimnetic (lower water layer) phosphorus levels increased with increasing turbidity. Inlet phosphorus levels were slightly elevated in June and July following rain events.
- **TRANSPARENCY:** Transparency improved as the summer progressed, however was less than 2010 and 2011. Historical trend analysis indicates a relatively stable transparency since monitoring began.
- **TURBIDITY:** Hypolimnetic turbidity increased as the summer progressed either from natural releases during anoxic conditions, or from bottom sediment contamination.
- **PH:** pH levels decreased to lower than desirable in the metalimnion (middle water layer) and hypolimnion.
- **RECOMMENDED ACTIONS:** Add chloride monitoring to establish a baseline data set. Continue to monitor the effect of herbicide treatments on water quality. Keep up the great work!

Dissolved Oxygen & Temperature Profile

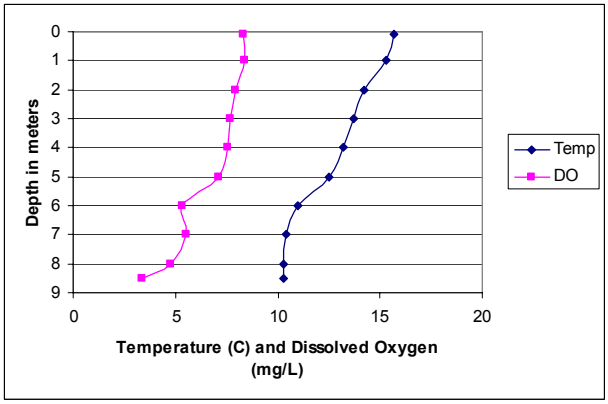


Table 1. 2012 Average Water Quality Data for LEES POND

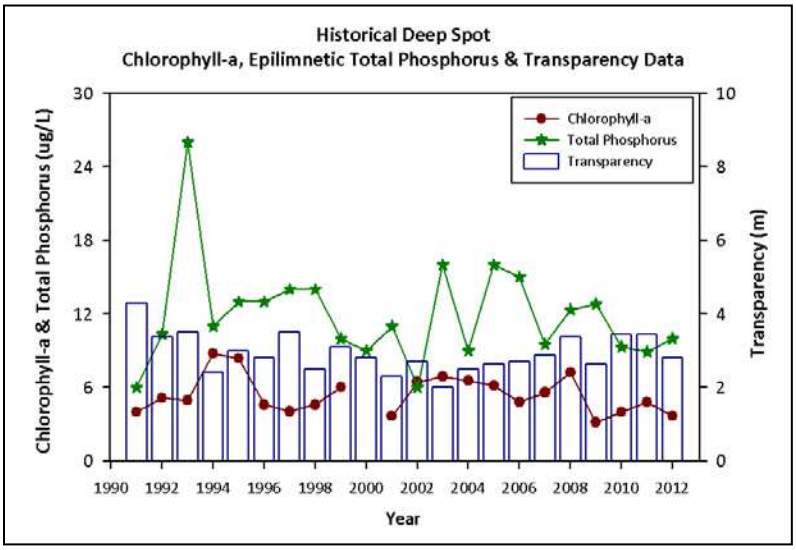
Station Name	Alk.	Chlor-a	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	m		ntu	
						NVS	VS		
Deep Epilimnion	9.33	3.65	52.5		10	2.82	3.53	0.73	6.85
Deep Metalimnion			46.4		11			0.82	6.29
Deep Hypolimnion			58.0		18			3.52	6.25
Inlet			53.0		16			0.99	6.59
Neighbor Beach				2					
Nelson Beach				1					
Outlet			50.7		9			0.71	6.84

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.



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